

THE SCOPE


The greatest enemies of initiative are modesty and shyness.

— Editor

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THE SCOPE



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THE SCOPE

Presents

The Measurement of Stereopsis by The Air Corps and Some Related Facts

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I. General

Statement by the Abstractor

This article is a condensation, not an original article. The abstractor does not entirely subscribe to the thoughts presented herein, however, he did not interject any idea of his own because he believes his fellow optometrists would like to know clearly and without alteration the ideas concerning stereopsis to which our air corps subscribes.

One of the main purposes of this article is to give detailed measurements of the stereometric apparatus used by the air corps, so that interested optometrists can build this apparatus themselves. Such an instrument would have a dual function. Firstly, air corps applicants in small communities have to travel (many times a considerable distance) to large cities to take the examination, not knowing if their visual functions are adequate; with the use of this apparatus, the optometrist could aid these men in determining their adequacy and if it is found lacking may be able to restore their stereopsis through proper orthoptics, aiding the man and rendering a real service to our country in this critical hour when pilots are greatly needed. Secondly, this apparatus would be of great value in the practice of orthoptics both as a testing and training instrument.

By depth perception is meant the ability to judge distance, or the power to appreciate the third dimension. It is this power that materially aids in rendering an individual capable of correctly orientating himself in relation to surrounding objects. It can be appreciated readily that this is an extremely important factor in aviation. It is this factor that enables the pilot to level off his airplane at the proper distance from the ground in landing, to take off with a safe margin over obstacles, to be proficient in gunnery, and maintain his position in formation flights.

II. Basic and Adjunctive Factors

Basic — The factors composing the basic group constitute a part of the physical functions of the individual; they are constant, and when considered together may be termed his "inherent ability" to judge distance. These factors consist of:

- (1) Physiological diplopia.
- (2) Accommodation.
- (3) Convergence.
- (4) Binocular parallax.

Adjunctive — The factors composing the adjunctive group may function independent of the individual; they are inconstant, and are common to all persons. They may be termed as factors which assist or enhance the basic

group. These factors consist of:

- (1) Size of retinal image.
- (2) Motion parallax (movements of head or object.)
- (3) Terrestrial association.
 - (a) Linear perspective.
 - (b) Overlapping of contours.
 - (c) Light, reflections, and shadows.
- (4) Aerial perspective, that is, the changes with respect to color, brightness, and contrast which different objects undergo on account of variation in the clarity of the intervening atmosphere.

III. Monocular and Binocular Factors

Some of the factors operating to constitute depth perception are common to monocular and binocular single vision alike, while others pertain to binocular single vision only.

Factors common to monocular and binocular single vision are:

- (1) Size of retinal image.
- (2) Accommodation.
- (3) Motion parallax.
- (4) Terrestrial association.
- (5) Aerial perspective.

Factors which operate with binocular single vision only are:

- (1) Physiological diplopia.
- (2) Binocular parallax.
- (3) Convergence.

In employing a test for the purpose of determining an individual ability to judge distances, it is necessary to utilize only those factors which operate to make for an individual difference in ability; that is, it is necessary to measure an individual's inherent ability.

In order to do this, the method employed must eliminate all external assistance. For instance, motion parallax is produced either by movements of the observer or by objects within his field of vision. For that reason it may be considered as an artificial factor employed to enhance the already existing facility. It should, therefore, be eliminated as a factor not related to inherent ability.

Factors external to ourselves which assist all of us equally, such as terrestrial association and

aerial perspective, should be eliminated for the same reason.

Factors which normally operate only at distances of less than six meters, such as accommodation, do not need to be considered when examining prospective aviators. Fliers are not, as a rule, called upon to form judgments at a distance of less than six meters.

When all external factors and those operating at a distance of less than six meters are eliminated, there remain to be considered:

- (1) Size of the retinal image.
- (2) Physiological diplopia.
- (3) Binocular parallax.
- (4) Convergence.

IV. Size of Retinal Image

As the size of the retinal image operates with monocular as with binocular single vision, the relative value of this factor can be obtained with the same testing apparatus by examining first both eyes and then one eye, the other being covered. With the test described herein, it has been demonstrated that the ability to judge distances is many times more accurate with binocular single vision than with monocular vision.

In monocular vision, there are eliminated the binocular parallax, convergence and physiological diplopia. Therefore, judgment must depend upon the size of the retinal image alone.

Since judgment of distance is many times less accurate when decision depends upon the size of the retinal image alone it follows that the important factors to be considered are physiological diplopia, binocular parallax, and convergence.

Physiological Diplopia—The faculty of recognizing differences in distance between objects which are located in space within our visual fields is founded upon physiological diplopia, although we do not recognize it as diplopia. Objects located nearer than the object fixed give rise to crossed diplopia, and those more remote than the object fixed give rise to homonymous diplopia. It is because of this homonymous and crossed diplopia that we receive the impression that objects are nearer or farther away in relation to other objects.

Binocular Parallax—While we perceive,

through physiological diplopia, the existence of difference in distance between objects, the binocular parallax augments this perception by giving rise to the impression of relief and solidity.

When we fix an object the right and left eye obtain somewhat different views on that object. The right eye sees a little farther around the object to the right, and the left a little farther around to the left.

This gives rise to two retinal images which are not exactly alike. When these images are fused the disparity is responded to by perception of relief and solidity.

When we perceive a difference in distance between objects our conception of the amount of difference may be accurate or it may be decidedly inaccurate. It is, therefore, desirable to determine the degree of accuracy; this is accomplished by utilizing the binocular parallax angle.

V. *Adjunctive Group of Factors*

The adjunctive factors with the exception of motion parallax exist and operate independent of the individual, but they are probably of as much value in judging distances as are the basic factors.

We are primarily equipped with the essentials for forming judgments and we soon learn through experience to utilize all other assistance that comes to hand. However, if these essentials do not function properly, then the value of all external assistance that is available is proportionally reduced because we do not know how to employ it. Because of this it is necessary to determine whether or not the prospective flier possesses all the basic factors of depth perception and if these factors are functioning properly.

With a normal foundation for judging distances the student soon learns, in his new environment, the air, to utilize all external assistance that is available.

After one becomes experienced in flying he may be deprived of all basic factors with the exception of the size of image, and still be able to judge distances sufficiently accurately to fly a ship. This is especially true if he is familiar with the ship, the terrain, etc. This

fact is demonstrated with experienced fliers who have lost an eye. At first they experience some difficulty, but this is soon overcome. Their ability to continue flying is due to the fact that flying, landing, etc., have become partially mechanical and subconscious and they have learned from experience how to utilize all external assistance to the utmost. However, when these individuals are deprived of all external assistance and their judgment must depend upon the size of the retinal image alone, they are many times less accurate than when both eyes are functioning.

VI. *Measuring the Parallax Angle*

The Howard-Dolman apparatus employed to measure the parallax angle is designed to utilize only those factors belonging to the basic group. All external factors which usually operate to assist in judging distances are eliminated. The examinee is given two objects at unequal distances from him. His physiological diplopia, binocular parallax, and convergence tell him that a depth difference exists between the two objects. It is his task to eliminate this difference, that is, to place the objects at equal distances from him. The accuracy with which he accomplishes this determines his inherent degree of ability to judge distances.

The testing apparatus consists of two upright rods, sixty-four millimeters apart laterally, viewed through an aperture in a screen at a distance of six meters. All that is visible to the examinee is an illuminated white background crossed vertically by two black rods. One rod is stationary and the other can be moved backward and forward in a groove along the margin of a millimeter scale by means of cords. The examinee endeavors to place the adjustable rod beside the stationary one so that both are at equal distances from him. When the rod is accurately placed the reading on the millimeter scale is zero, and the parallax angle and physiological diplopia cease to exist.

The testing apparatus is so constructed that the size of the binocular angle will equal 10.3 seconds when the interpupillary distance is sixty-four millimeters, the stationary rod is located at six meters distance and a depth difference exists.
(please turn to page ten)

Youth and the War

by Arnold F. Buonfiglio

Ever since the canker of war infected our country, we have had lectures, books, and magazine articles flung at us from almost every writer in the United States. The topic of war has been teased into fine particles, analyzed, and treated from every conceivable aspect — that is, every aspect but one. It seems that no one is at all interested in what Young America thinks about the war. Of course, the opinions of the younger set can have little effect on the of our winning the war; but it is not youth's *opinions* that need expression. It is their *reactions* that would bear investigation. How has the present crisis affected their ways of thinking? Why not examine the American youth from a point of view other than that of his fitness for military duty? Since the subject has been so badly neglected, and since my intimate friends include young adults of all temperaments, I resolved to do a little research on the subject.

One fact was outstanding: very few of the young folks seemed to know "what the whole mess is all about." To them, a newspaper was nothing more than comics and a sports page. No doubt some socially inclined individual would like to take his sword in hand at this point and wage a bloody war on such an anti-social attitude. But is this truly an anti-social attitude? I think not. The transition from youth to maturity involves a change from the spiritual to the real — often a painful change. Can these young adults be condemned, then, for their inherent desire to stave off reality as long as possible? Again, I think not. Since newspapers present reality in its barest form, it is quite logical that those who want to evade reality should shun the newspapers.

Concerning the effects of the war upon Young America, we could deliberate *ad infinitum*. These effects, however, are not easily seen. You could not scrutinize that young gentleman on the street and observe in him pathological changes that are a result of world conditions. Only by constantly associating

with these young people, and by conversing freely with them can you detect the alteration of ideas, the decay of ambition that is taking place from within them.

For example, you may meet a friend on the subway one morning. He was a classmate of yours in high school. At present he is a college student. You chat with him, probably about school. Before long you learn that he is taking a course in liberal arts. He seems to be a contented, ambitious sort of lad; surely the war has not affected his ideas. But you were not observant enough. Ask him more about his course at college — what he intends to branch into, after he completes his study of liberal arts. You find him groping for an answer to your question. He had intended to study medicine; this was to be part of his pre-medical course. There was a college in the South where he would actually study medicine. Of course, he would be forced to work to pay his tuition and expenses, but if other boys did it, so could he. These are the plans he had made before the war; but now, he just doesn't know. Within the next year he expects to be studying another art — the art of war. Your young friend now stares at the floor and you change the subject.

Here was a boy who seemed quite satisfied with life; all was right with his world. Yet there was a note of despair in him, so elusive that you almost failed to detect it. Very likely he was not aware of it himself. If you were to ask him outright if he loved life, he might have answered, "Certainly; I have nothing to think about but school and diversion." He lives in the present. All youth lives in the present. That is why it is difficult to observe anything but contentment in most youths, no matter what the future may hold for them.

Perhaps another day you may meet the fellow who lives next door to you. He is employed in a defense plant. This boy's job came as a result of the war. The usual light conversation is shared between you. Your

The Sixth Column

by Charles C. Poulos

The writer, in quest of a new heading for this column, has conducted a short and extensive contest. Some of the titles contributed were not fit to print. The office staff did its part by offering such titles as "Senior Saps" and "Senior Spice". Both are appropriate titles. But, my dear children, our great president and world emancipator, in his latest speech coined the phrase "Sixth Column" which pertains to gossip and rumors that float about, so be wary.

Classmates in the service honor roll are now members of the first column of our armed forces. They include Edward Davis, ensign, U. S. N. R.; Lloyd D. Clark, U. S. Air Corps; Roger Bund, U. S. A.; Jere La Vine, medical corps, U. S. A.; Gordon A. Summers, U. S. Air Corps.

We hope to have Joseph Scanlon, MSO's handsome student, back among us soon. If you don't think he is handsome, just ask him. His recent illness has taken none of his beauty away; and he has caught up on his beauty sleep—and freckles. Joe once won, at age five, a freckles contest—2579 of them. Some silly dame spent a week-end counting them.

The blood donor's column is as follows: Bernard Isokson, who gave a quart of blood, Evelyn Adler, Jerome Rutberg, Sumner Bloom, Clinton Wilson, Walter McKenna, Bob Rosenthal, Paul Gates, Bob Kraus, Sumner Cohen, Victor Laliots, and C. C. Poulos. Come on, class, let us get behind this drive of the Red Cross in its effort to save American lives. Remember, it might be your own. For one donation of a pint of blood you get a bronze pin; for giving all your blood at one time you get a free ride in a hearse. Now we are ready for the sixth column.

Zalkin, Taylor, Forman, and Fradkin are the latest converts of gin rummy. They drink the gin and then—. Five minutes before the last bell the cards are out.

Saperia, who used to play cards and do his armchair theorizing at the same time has be-

come practical and spends his leisure time in the clinic with unfortunate sophomores as his victims.

The gamma boys of "64" have finally succumbed to the modernistic touch. They have acquired, no less, an electric refrigerator. (I wonder how they got around Henderson of the priorities board.) The fellows wish to make an announcement. All are welcome to partake of food and liquid refreshments at "64" by ringing the doorbell with their elbows. They can't afford to have their guests come empty handed.

In one of our Physiologic Optics class recently, Paul Thornton turned to Harold Meyers and asked to be awakened from sleep when Dr. Cline started to speak English again. The twelve o'clock bell rang and awoke the entire class.

Thursday and Friday morning classes, although scheduled on war time, do not begin till high noon. One cold February morning "many" present at the first class signed a petition to troop down en masse to the Old Howard. A collection was immediately made for our Dr. Asarkof's ticket. It failed, for instead of oomph an exam was thrown.

Conservative Graubart has joined the riding academy of Westland Avenue where a semester period of pearl diving is mandatory.

All Pearly's checks are endorsed by his good roommate. Gates is even reluctant to sign the class attendance sheet, that is, whenever he is present. The love preaching of Apostle Paul, along with his disciples Van Otis, Wilson, Craven, and Quinn can be heard at the girl's dormitory of the Boston Conservatory of Music on the Fenway.

A member's dream and a doctor's dilemma: Sergeant Cohen and Yardbird Namias. Remember, it's our country we are thinking of first.

When it comes to discovering and localizing any eye opacities Evelyn Adler cannot be surpassed. By the way, would you like to purchase a car? If so, with but very little

collateral Evelyn will finance you.

Charlie Bowman is illustriously working on his photo-electric cell with which the entire refractive error of the eye can be found in a split second. Neiman does not only think this impractical, but claims it as screwy as is its proponent. On the other hand there is our quiet, reserved Turner religiously working on his revolutionary method of dynamic ski-ametry. Why, it even baffles Dr. Green!

Then again we have the well-informed fishing and mountain guide, Rollie, who surprisingly enough, is attempting to extract C_2H_5OH from Maine potatoes. Kefferstan is his staunchest supporter. That explains why Keffy is carrying around an empty pint.

The blond and smiling McKenna has won undisputed right to the school handball championship. The runner up was none other than hard playing Edward Calmus.

During lunch hour, Katz, McDermott, Bloom, and the 'sucker' for the day can be

found rolling the balls down the gutter at the Hemenway Alleys. They play a nickel-a-dot game with a dash to make the one P. M. class.

There is more than one way of removing a rum stain from an evening gown. The cleaner couldn't do it, but our smart friend solved her own little headache. She entirely soaked her once red dress in a tub full of Carioca.

The young men and women of our country and many other lands are dying for what they believe will be a wiser world. With thousands losing their very lives we who are enjoying, as yet, the civilian way of life feel impelled to labor more vigorously than ever before.

And, until larger duties call, our contributions will be unspectacular. So with the reminder that the professional man or woman must accept the widest sort of social responsibility, let us put our very all into our chosen profession.

Sport Eyelites

by Phil Regan

Now that we have a year round scholastic curriculum and the months in school include the majority of the summer months, we must have many who participate in such sports as golf, tennis, baseball and the like. It seems, at least, that we could get together on many of these.

For the summer, golf seems to come into prominence among us. With such capable golfing Optometrists as McKenna, Cohen, McDermott, Flodin, Bianchi, Whelan, who, by the way, is an ex-Maine par breaker, and many others whose names I am not familiar with, we could put a very good team on a course.

Also, tennis lobs up to the net with such capable racket men as Craven, whose tutelage at Longwood is sufficient to allow him a place in this sport, and Nicolosi, champion of the class of 1943, to form the nucleus of a very good team.

Not only the winter but also the summer brings out the bowling enthusiasts. Just a year or so back we used to have real inter-class bowling matches, which brought out several excellent men, as Silverstein, Katz, and McDermott. Others noticed as likely are Kraus, Wolfson, Kates, Dimmick, and many more.

Now comes the sad part of all the above-mentioned. There is a sorely noticed lack of spirit. Why, with such an abundance of material, is this so? Surely our basketball team tried, but the inability of practice and time to practice offered no opposition to our opponents but these fellows still tried. Why can't everybody do the same?

Let's see now, if every man will try to join in on some sport and let's see everybody else show a little more spirit for all of them. That's not asking too much.

Thru the Editor's Eyes

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The Editor Says

Greetings!

It is with a certain amount of trepidation that we take over the editorial affairs of the SCOPE at this time. Our country is at war. The world is at war. Under the present emergency conditions, our courses will proceed with unabated fury during the summer. It is spring.

The customary procedure of the SCOPE at the beginning of a new year is to welcome back our old friends and classmates, and to

extend a welcome to the entering class, ending with admonitions to put forth every effort in the matter of studies.

This year we are not returning from summer vacations. At the present time there is no entering class. Since none of us can be certain that he will complete his courses before being called to serve with the armed forces, it should be unnecessary to advise everyone to take full advantage of every available opportunity to information in the time at our disposal.

The beginning of a new school year in springtime catches most of us doubly handicapped: never before have we attended classes during the month of August; spring fever is commencing to produce the cardinal signs. The prospect of mid-year examinations occurring at the end of August seems rather appalling to us who are accustomed to a period of mental relaxation after eight months' work.

This year, however, things are different. Factory workers everywhere are laboring under forced draft to produce the instruments with which to bring this war to a successful conclusion.

People are making sacrifices of all kinds: financial, material, and spiritual, in order that the vital flow of armaments shall not be dammed. Old men and young children alike are purchasing Government Bonds and Stamps. All of us are helping to conserve petroleum and tires.

Seen through our editorial eyes, this is probably the finest type of insurance policy on the market today, issued by a firm of which we are all stock-holders, and which, in over one hundred and fifty years of underwriting, has met all claims promptly and in full—insurance covering our future freedom as individuals and as a nation. We urgently recommend that everyone buy United States Government Bonds and Stamps.

It seems fitting, also, that we should do our part by redoubling our efforts in preparing to render optometric aid to the citizenry, both now and after the close of the war.

Junior Jests

by *Malcom Kates*

Having a particularly strong stomach and congested head, I'll take a chance on incurring the terrific wrath of my dear fellow-students by attempting to prophesy their status in life — twenty years hence.

I am well aware that this will be a thankless job. I know this recording will never make a Boswell out of me, nor will the girls be wearing MacKates buttons at two cents or even for free:

David I. Yorra: Named after another necessary evil, Davy will probably be elected governor. Furthermore, he'll probably be elected Senator. Furthermore, he'll probably be elected President. Furthermore, the country will collapse.

L. Cohen: This Squire of Scollay Square will become the editor of Ballyhoo.

Bershad: Naive Henry will start to wonder what Dr. Ehrlich's Magic Bullet is for.

Ed. Goldenberg: In twenty years, the sentence will still be twenty years.

L. Dimmick: He'll still be using an eyebrow tweezer on that tough beard.

Herman Pollock: Here will be another politician, ruling from the turf of Chelsea Square, with gardenias on both lapels.

D. Cohen: I feel sorry for him. His father might be retired by that time — and how's he going to tell all he thinks he knows about medicine?

M. Kates: They've started roping off Coolidge Corner in joyous anticipation of the day they'll rope him up.

My Teachers: — well, at least they won't be my teachers. (Did I say that before exams?)

Johnny Reardon: Now, only a psychiatrist's dream. In twenty years, a psychiatrist's patient.

D. Rubin: He turned out to be an Optometrist.

Young: Getting no where fast with the Class of 1962 at Smith.

Biachi: He'll probably be in favor of woman suffrage by that time.

Dick Urdang: Why not forget about the future?

Cowan: Blank. This certainly is more revealing than most of the other dumb remarks.

Robert Lippin: He'll be a groundkeeper at Ebbet's field. And a personal friend of Durocher, mind you!

Monte Kofos: This pup of Marlboro will be a full grown hound.

Edw. Whelan: He will land up in a photo shop, using his head for a reflector. (Eh, baldy?)

Amy Caton: The only woman alive in 1962 who can look a man straight in the eye.

Arnold Buonfiglio: Well preserved, thanks to his brother's influence.

Richard Wells: Mr. Politeness, will still be carrying on the work of Emily Post.

L. Dubois: He'd better get more sleep or he won't last twenty years.

Jack Flodin: If he can keep together, he'll become the president of the American Optometric Association.

H. Rosen: All examinations will be held in the shade of the old apple tree (for the convenience of the doctor.)

Jack Beloff: All that can be said is that he'll be stationed in Malden. But Jack knows that that's plenty.

Leonardo Wolfson: He'll probably be billed as Sandow's successor.

Normie Steinberg: Let's hope that he'll look more alive than he does now.

Normie Pansey: That assignment ought to land him up in some side show. Of course, that's only one reason.

John Collins: Even after twenty years, he has never figured it out.

Luther Bismore: The tortoise finally overtakes the hare.

Arturo Veaner: They tarred and feathered him — and was he surprised!

Nelson Waldman: No, dearie, he won't do all his butchering at Stop & Shop. After all,
(please turn to page eleven)

friend evades all issues pertaining to the war, for the simple reason that he knows very little about it. He finds time only to read the comics and the sports page. So you talk about his work. He tells you his salary and your mind's eye immediately sees you working beside him.

Why, at the rate he is earning money, in no time at all he should be able to retire — so it seems. To search for despair in this boy would be folly. He has much more spending money than the average boy of his age. He dresses well and apparently deprives himself of nothing. Just to be sure he is perfectly contented, however, ask him a question or two. Ask him about the future — what he intends to do with the small fortune he is amassing. He tells you that he is not quite certain what to do with the money he has saved. There were two plans he had considered. One was to buy a car — he specifies, "a convertible coupe with white-walled tires."

He discarded this plan because there were too many disadvantages to owning a car in wartime. The other plan was to save his money for an education in the future. A very wise plan, to be sure, but you learn that your friend has no intention of carrying it out. He is awaiting a call to arms within the next few weeks, so he has adopted a third plan. He will spend his last week of civil life in giving vent to all those wild desires he has suppressed for so long. He has the money, so there is nothing to stop him. No, this is not the time to be thinking about education and automobiles, he tells you. There will be a last glorious week of enjoyment, and then the armed forces—and a life of materialism. Your friend has become too somber and you change the subject.

Here was an apparently fortunate boy, who had actually *profited* from the war. His earnings were no paltry stipends for a chap of his age. But we did manage to detect that elusive something in him, did we not? Yes, we found a distorted sense of reasoning in him, and a degredation of morals, too. So it is with thousands of others youths like him. An insidious sort of panic is overtaking them — panic born of despair. Elusive though it be,

it finds expression in some way or another. In those youths whose judgment is more rational, the panic is slight; in others, it is morbid. The American youth is a temperamental sort, not to be trifled with. He is used to living in a democracy where nothing is kept from the aggressive individual. In wartime, all of us are deprived of many things. The youth finds it difficult to submit to such unwonted dispossession; as a result, he is subject to the psychological pathology which we have already observed: decay of ambition, despair, and panic.

Of course, there are a handful who stalk about, too well insulated from the world to be trifled with wars that do not concern them. These individuals are merely evading the issue. They will be affected in some way, soon; and when their shells are broken, they will feel the jolt with much more force than if they had braced themselves.

Most of the older folks seem partial to the armchair psychology that "the future gener-

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The Sixth Column

by Charles C. Poulos

Before I continue with the regular senior Sixth Column, I'd like to inform you that your new senior reporter had his eyes wide open at that all-important Junior Prom of ours. Due to the inspiring atmosphere and the overhanging palm trees, I had to do quite a bit of neck stretching just to find out what was going on, but it wasn't hard to see that our class president Walter McKenna sure had a great time. That smile of his was proof enough, and exemplified the enjoyment of all those present. Yes, exams were behind us, and the Fox and Hounds' "Rhumba Casino" simply overflowed with happy faces, good music, and good dancers. The affair met with complete success, and the members of the committee deserve a good deal of credit. Keeping our senior affair in mind, let's all plan to double our school spirit and to strive for one hundred per cent coöperation.

No neck breaking was necessary to see that Bernard and Martin were having one hellafatime. Bernard and Martin went out for a little breeze (nobody wonders why) and returned with a red lantern and a hound with which they went in search of a fox or something.

At the beginning of a 1:00 p. m. class, Dr. Cline enters and finds the class in its usual state of turmoil. His broad smile stiffened up, and not trying to offend anyone in particular, burst out with, "Some of you act like high grade morons." The loud voice of Calmus from the rear exclaimed, "Nothing cheap about us, eh Doc?"

Arnelda, who is vainly attempting to obtain an assignment to the Watertown Arsenal, is contemplating wearing slacks and getting a Victory bob. I wonder what are Evelyn's chances of doing the same?

Doctor Ralph R. Green, student recruiting officer of the U. S. Air Corps, has been showered with all sorts of questions pertaining to the deferred enlistment program of the air corps. Many are anxiously awaiting the ruling on

the permissibility of contact lenses in meeting visual requirements.

The drugstore cowboys aren't just in the corner apothecary for an 'Optometry Special' sandwich — a ham and cheese combo — but to flirt with pretty Tess.

Sergeant Cohen is feverishly working for evidence to substantiate his theory of accommodation, much to Dr. Green's delight.

Here's the results of the senior class election held early in May. Reminds one of the national political election. President Walter McKenna and Vice-President John Quinn were swept into office for the third consecutive term. Their platform cry was that a change in these crucial times would be detrimental to the class welfare. Seriously, though, we are fortunate in having such leadership and I'm quite sure that they will do their utmost for the school and profession. In the past, very little coöperation has been shown by the student body in any attempted scholastic or social undertaking. What say we awaken that spirit of coöperation, and back our officers with our utmost in this one last year of school.

Irving Fradkin, our well trusted treasurer, was reelected as treasurer. May I see you in McNiff's for a couple of rounds, eh, Irving?

Our new scribe is Paul Thornton. Let's hope he doesn't suffer from writers cramps when recording the notes of our class meetings. Poor Arnelda's fingers were worked to the bone in our Junior year.

Harold Meyers, who towers well over six feet and is nearly as broad, was elected sergeant at arms. What's the password today, Harold? Eye for invasion?

The July and August issues of the Scope will be combined into one issue.

- The Scope

Thru the Editor's Eyes

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Naval Aviation

Massachusetts School of Optometry undergraduates are among the top candidates for commissions in Naval Aviation, a Navy spokesman said this week.

With the age and educational requirements recently lowered, so that men with high school diplomas are eligible, the United States Navy is looking to the accredited universities for the officer material to lead the younger men in the fleet air arm.

College men actually are in better position under the lowered requirements because the Navy, in order to maintain the high standards of efficiency and personnel, must look to the older, more mature and better educated youth for its squadron and flight leaders. "There's a premium for college men now. They have never had such an opportunity before," the Navy spokesman said.

All high school graduates between the ages of eighteen and twenty-six, inclusive, are eligible to apply for commissions, but preference will be given to college students and high school graduates of college calibre, Lieutenant Commander T. A. Collins, noted flyer and senior member of the Naval Aviation Cadet Selection Board, said this week.

"We want college men because we need their educational training, their mature judgment and their ability to lead young men," Commander Collins said. "We want college men because we need the 'extra something' that college men have to offer.

"At the same time, college men will have the added incentive of knowing that they are not throwing away their education and training. Every man in the Navy is a specialist. Every man has the opportunity to learn for the future. Navy Aviation, in particular, offers the greatest opportunity of all. Just as the automobile industry grew from the First World War, so Aviation will be the industry that grows from this War. There's a brilliant future ahead for men who are trained in Naval Aviation, which undisputedly has the finest program, finest training and finest equipment in the world.

"The pay is the highest for any service man in the world. The Cadet receives \$105 a month. When commissioned and granted his 'Wings of Gold,' the officer will receive approximately \$245 a month," Commander Collins continued.

"And, in the last analysis, this is War. This is an all-out War, which will determine whether this country will continue to be the land where men can achieve success, can use

(please turn to page fifteen)

Junior Jests

by Veaner and Lippin

As we take our typewriter in hand and begin this month's article, we solemnly regret the inconvenience we caused you in the last two issues; namely, reading material by our guests. And, so my dear Juniors, for you are Juniors, we will give you the greatest pleasure of reading another pure, unadulterated article of stuff and such about nothing in particular.

Our quorum was diminished by four, Waltham, Flodin, Young and Regan. During the finals John Collins received a notice to report the next day at Devens. John is back at school again. If this continues any longer Collins will be draft happy and it won't be from beer. Jack Flodin is holding down a defense job and "Nelly" and Phil have enlisted in the Army Air Corps.

Lippin, the magnificent, is the only one in the class who can turn his right eye up and at the same time turn his left eye down. Kates Mith is going to enclose him in an air-mail envelope and send him to Mortimer Throttlejerk, that eminent statarik. If Lippin can perform this difficult feat for Mr. Throttlejerk he will be offered a six weeks' engagement on the radio program, "Nobody Likes a Jerk, And Why I Am."

This column has the sad and solemn duty of announcing the cessation of the Yorra Transportation Service. His daily passengers will henceforth have to wind their peculiar ways to school via the street car. What will happen next? Will the money ever replace the man? Ask Steinberg; he's got the answer.

And now as a special feature we present — a poem!

An Ode to a Heterophoria

How to Make Friends and Induce Vertical Imbalance

Did you ever have a phoria,
Has your left eye seen the flooria,
When you right is looking down and out?

Now with my meager knowledge,
For I went to Optometry College,
I turned into a genius from a lout.

When I'm sitting with my girl
In a parked automobile,
I can't tell my left from her right.

With my eso's and my exo's,
And my hyper's and my hypo's,
We started in to quarrel and to fight.

And from phoria to tropia,
Listen, all you dopia,
"Correct your eyes lest they fail."

So again I'll emphasize,
Look at my black eyes,
And beware, correct 'em
Lest you wail.

-- Stereopsis

(continued from page five)

ference of thirty millimeters exists between this and the adjustable rod.

Among Americans interpupillary distances range from fifty-eight to seventy-four millimeters with an average of sixty-four. In conducting tests it is impracticable to compute the size of the parallax angle of every individual whose inter-pupillary distance is greater or less than sixty-four. Therefore, a depth difference of thirty millimeters is taken as the outside limit and those who persistently exceed this limit are considered as defective in judging distances.

It has been demonstrated that an individual who persistently projects the adjustable rod more than thirty millimeters from zero and possesses an ocular defect experiences great difficulty in learning to fly.

(To be concluded next month)

Soph Soap

by R. Saul and A. Josephson

Well here we are again! But of course we are not the same as before. We have passed another milestone in our journey to success. The memories of a fun-filled Freshman year, I am sure, will remain with us throughout our practices and our lives. We extend our thanks to the upper classmen for the dances, smokers, and parties they gave us. We also wish to thank Dr. Harris and Mr. Victor for the training and guidance we received as Freshmen. Last, but not least, we wish to extend our sincerest congratulations and best wishes to the graduating class of 1942.

But now we will dispense with the sweet talk, to which we are so unaccustomed, and return to our usual gruesome gossip and dirty digs. Congrat's are in order to G. "Del" Danielian and Mary Kavookjian who have set the date for June 7. Did anyone notice the chorus of chattering teeth and knocking knees in our first period with Dr. Namias? The boys in O'Keefe's dropped their glasses because of the intense vibration set up by our knocking knees chorus. By the way, Mr. Victor is still knocking himself out in front of the class. It seems Murray Miller lost so much money playing poker he had to resort to dark glasses and a tin cup. He can be seen every A. M. in front of the school. Greetings and salutations to our new students, W. Feri and N. Kahanovsky. Our fellow agitator, "Red" Greenblatt, is in Philadelphia doing research work on DeCesare's "Four Pole Theory." I wonder if his assistant is enjoying the work? work?

Congratulations to our new class officers: President R. DeCesare, Vice-President A. Iacovelli, Treasurer G. Sweet, Secretary C. Seidel and Sergeant-at-Arms R. Ross. We extend our sincerest thanks to the men who have left office, for the work they did throughout the Freshman year.

Found: Pig's brains, well preserved in formaldehyde. Whoever belongs to them, kindly get in touch with R. Saul. We would like

to know who the individual is that gets up on the platform every morning, stands at a seventy degree angle to the floor, points one finger at the class, and quietly drools, "Fellow woikers!" N. Kahanovsky would like to start a Hi-lo Jack club or a Hearts club. Anybody interested please get in touch with the aforementioned character.

Next month as a guest writer we are not going to have Sam "your-pants-haven't-shrunk-the-required-length yet" Jernazian.

Well kids—Remember Pearl Harbor—You know, that little blond across the street—Buy stamps for defense and kick a slap-happy Jappy and his sappy pappy indepants—

So long —

Saul and Joe

Seeing Through An Air Raid

1. If you wear glasses, carry a spectacle case. Take off glasses and put into case when air raid comes.

2. Keep eyes closed as much as is practical. Eyes roll up when the lids are closed, and this protects the delicate cornea or window of the eye.

3. If your eye is injured during an air raid, wait quietly until help can reach you. Others may be similarly hurt, and you cannot always expect immediate personal attention.

4. If dirt enters the eye, flush freely with water.

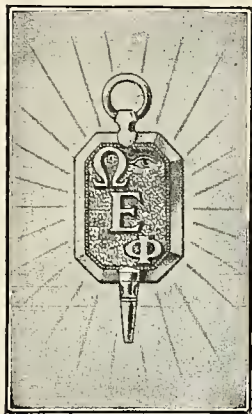
5. If your eye is burned, either by chemicals such as those contained in gas shells or directly by fire, flush freely with water, and as soon as possible drop olive oil or castor oil freely in the eye. Cover with a clean handkerchief.

6. If severe blow is received over the eyes, *do not blow nose*. Blows about the eyes frequently fracture the delicate bones of the orbit, and if the nose is blown hard, air finds its way into the loose tissue of the lids, causes the lids to swell and the eyeballs to protrude.

7. If a foreign body enters the eye, do not
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Omega Epsilon Phi

by Louis Vaniotis



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Recording Secretary
JOSEPH E. MACDERMOTT

Corresponding Secretary
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The Fraternity held its annual banquet in honor of its senior brothers who are now seeking, as graduates, admission into the optometric field so that they may further aid the cause of our profession. A large number were in attendance and good humor and brotherly love prevailed throughout the night.

Encouragements were in store by our past senior brothers and possibilities for greater unity and a larger membership appeared as our reward, considering this as a favorable consequence. This history of the Fraternity was expressed in brief by our former president, Brother Fine, to whom a gift was presented as a token of appreciation. In conclusion, a most joyful evening was spent with the rest of the brother graduates who in turn formulated their future desires with nothing but kind and sincere words.

The Fraternity was recently well represented in the news of our national paper as notable mention was made of the achievement of some of our present officers. The article was written by our corresponding secretary, Joseph Craven, Jr.

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Pi Omicron Sigma

by Robert Kraus



Π Ο Σ

DR. R. H. GREEN, *Grand Chancellor*
BERNARD ISSOKSON, *Chancellor*
ROBERT KRAUS, *Vice Chancellor*
DANIEL COHEN, *Scribe*
IRVING FRADKIN, *Treasurer*
ROBERT LIPPIN, *Sergeant-at-Arms*

With the beginning of a new year Pi Omicron Sigma is proud to say that on May 31 the first in its series of social functions will take place. It has been decided that all members and pledges of Pi Omicron Sigma are to partake of an old fashioned hay-ride and "weenie-

roast." This is the first in what we hope will be a series of outdoor functions, to be held during the course of the exhausting summer months.

After having had several meetings, I can see that great things are going to be forthcoming this year. The officers, although new, are doing an admirable job. It really is difficult to step in and take over where such capable men as Sid Newman, Stew McKenzie, George Cohen, Perry Savoy, and Arthur Weisman have preceded you.

Pi Omicron Sigma is proud but regrets that this year it will be without Nelson Waldman. This amiable boy, who would be a junior now, felt that it was his duty and he enlisted

(please turn to page fourteen)

Sports Eyelites

by Eddie Whelan

Again the greedy god of selective service has reached into our midst and claimed such sport-minded students as:

Jack Flodin — A member of the varsity basketball five who, because of his outstanding ability, was unanimously elected captain of the team for the coming season. Jack was also president of his class.

Phil Regan — Phil was also a member of the basketball team and a very capable gent as far as golf is concerned. Your correspondent can vouch for his golfing ability because something like a dollar and a half passed from these pockets to his one memorable afternoon last fall.

In spite of these losses, M. S. O. still has a goodly amount of sporting talent remaining, although most of it is veiled behind the screen of inactivity. A few examples of these unknown stars and a little bit about their records should follow to verify my statement.

Duke Dubois — At the present, a student of the junior class who made a name for himself as a pitcher while attending St. Louis High. If your reporter remembers correctly, "Duke" School in the great city of Biddeford, Maine, pitched five consecutive shut-outs against five of the better teams in the Potato State.

Bob Lippin — The kid from Brooklyn who is the "spitting" image of Pee-Wee Reese when it comes to scooping up those hard hit ground balls. It's too bad Bob doesn't get a chance to show his ability as a member of a M. S. O. baseball nine.

Charlie Seidel — Another gent from Maine (guess I'm partial) who really can play a swell game of tennis. I also can verify this by reporting the defeat he handed your reporter. It is as follows: 6-1, 6-0, 6-2.

By the way, wouldn't this be a good time to quote the famous saying of Jim Britt? "If you can't take part in a sport, be one anyway."



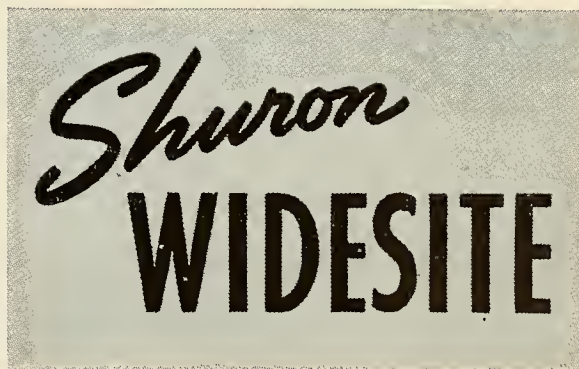
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Epsilon Omicron Sigma

by *Arnelda Levine*

May has certainly had its effects on the girls. With the oncoming of summer, bringing buds to the trees and blossoms to the flowers, so are the girls blossoming. Whisking around the school clad in bright colored cottons they certainly add life and color to their surroundings.

Perhaps that is why the increase in popularity of the girls has risen to a new high. We hope Washington doesn't put a ceiling on it.

Evelyn sure has been toying with the hearts of many — oh, so many men. She does not have to gently and accidentally drop her handkerchief as she passes by a group of attractive males nor does she have to beg for introductions; no she just walks by and their hearts beat in four-four rhythm (so loud it sounds like the clapping in "Deep in the heart of Texas.") It sure is dangerous having such an attractive femme wondering about the halls of M. S. O.

But she's not the only one. Competing with her and giving her good strong competition is our junior, Amelia Caton, who looks lovelier today than yesterday, and who grows lovelier every tomorrow. Her friendly, warm smile is sure to be seen as she climbs up and down the school stairs — and it speaks more for her than a thousand words. That friendly smile has won her many friends, including men; and speaking of men she is (can you keep a secret?) — she is a bit of a tom-boy. Her favorite pastime is taking long, long walks. Some men have been getting ready for the Army by walking long miles — following Amelia.

As for myself — I'm happy. I live in a free world where there is harmony and friendliness; in a free world where flowers may bloom and give sweet scents; in a free world where birds may sing and fly freely; in a free world where a woman can keep her man — even if she has to hit him on the head to hold him — it's a free world.

-- Omega Epsilon Phi

(continued from page twelve)

Plans are now under way for additional activities such as educational lectures and probably a few social functions for the summer months. Also the Farernity will have, as in the past, the pledging of new brothers to be followed by a formal initiation and a banquet. With present circumstances and the current year being shortened, we hope to extend our fraternal activities as much as possible so that our accomplishments may equal those of the past.

Alumni Notes:

Lewis J. Beckwith is now the recording secretary for our national chapter.

Frank J. Garfi, a member of our armed forces, was present for the graduation exercises with a good old southern tan.

-- Pi Omicron Sigma

(continued from page twelve)

in the United States Army. Here was a boy whom we all loved and admired. Here was a man with big ideas. Yes, here was a typical American patriot, honest and unselfish. I am sure that Pi Omicron Sigma and all his classmates will always remember him and I know too that we all wish him the best of luck.

To show those boys who are making America safe for us, let us all do our part and help relieve some of the burden. No matter how little it is you can feel that at least you *have helped*. Some of you have given a pint of blood. If you haven't, try to do so and if you have, do so again. But here is something we can all do: let us all buy UNITED STATES BONDS AND STAMPS.

-- Youth and the War

(continued from page seven)

ations will pay for this war." Very true, but why must those words roll off their tongues like so much child's prattle? Where are those writers who allegedly represent American public opinion? Is the subject of youth and its problems a forgotten subject? It should be more momentous than ever today, when the youth of our nation is badly in need of guidance and encouragement.

We speak much of utility in this democracy of ours. Yet, as I see it, the unity between youth and the managers of our country has always been somewhat nebulous. In time of war, if at no other time, this bond must be strengthened. We must remember that, although it is the leaders of nations who *make wars*, it is the youth of nations who *fight* them; therefore, a genuine understanding must exist between the youth and the leader, to dispel the youth's notion that he is so much gun fodder. This can be done with the mighty pen and ink; through the thousands of periodicals that reach across the nation; and by the thousands of brilliant writers whose eyes are now turned towards Europe. Yes, wars are won by the young in body — the young, who must be made to understand that their suffering is no unfounded; that it will make a new, blessed world of us bye and bye.

-- Naval Aviation

(continued from page nine)

their education and ambition and freedom as they wish.

"I appreciate the view taken by college men in wanting to finish their college educations. I took the same attitude the last War, when I was in prep school. But, quite frankly, we must have more college men, now, today. It takes the better part of one year to train Navy Pilots. The victorious drive must wait until we have them. Aviation will be the deciding factor in this War.

"We don't say that Naval Aviation will win the War, but we do say that the War will not

be won without Naval Aviation. It's your duty to your country to make yourself available in the best way you can. It's our duty in the Navy to give you, as college men and volunteers, the best we have to offer for the present crisis and for your own futures."

Besides granting the highest pay and best training in the world, Navy officials demand that every applicant be officer material. Every prospective officer is hand-picked. Companionship among men of college calibre is a keynote in Navy psychology.

Application may be made in person, or by writing to the Navy Flight Board, sixth floor, 150 Causeway Street, Boston. Line Officers from the Board will make periodic visits to all colleges in New England to interview applicants and give preliminary Flight physical examinations.

-- Air Raid

(continued from page eleven)

rub the eye. Allow tears to collect and they may flush out the foreign matter.

8. If an eyelid injury is followed by considerable bleeding, cover with a clean handkerchief and apply pressure till bleeding stops.

9. If you suddenly lose a portion or all of your vision in either eye or both eyes, remain calm. *This type of blindness is often only a phenomenon of hysteria and is not permanent.*

10. After the air raid, if you have suffered an injury, consult your own *eye physician* or an *eye dispensary* as soon as possible.

— Issued by MCINTIRE, MAGEE & BROWN CO., through the courtesy of the Medical Advisory Committee of the Philadelphia Committee for Prevention of Blindness.

The Editorial Staff offers it's apologies for the belated publication of this issue.

- The Scope

page fifteen

America Needs KEEN EYES

Army and Navy personnel, industrial defense workers and civilians cannot contribute their best efforts to the drive for Victory unless their eyes are right.

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"Optometry, the Profession" must continue to build for a clear concept and a unity of thought

and action, for this is the foundation for the public realization, acceptance, and appreciation that the cost of eye comfort and visual efficiency must be measured by the professional services rendered and not by the price of glasses.*

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